



UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

*[Handwritten signature]*

09/396352

APPLICATION NO. 09/396,352	FILING DATE 09/14/99	FIRST NAMED INVENTOR TUMER	ATTORNEY DOCKET NO. T NOVA-002-USA
-------------------------------	-------------------------	-------------------------------	---------------------------------------

RONALD R. SNIDER  
PO BOX 27613  
WASHINGTON DC 20038-7613

WM02/0828

EXAMINER

HUANG, S

ART UNIT

PAPER NUMBER

2632

DATE MAILED:

08/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

*[Handwritten signature]*

# Office Action Summary

Application No.  
09/396,352

Applicant(s)  
Tumay O. Tumer

Examiner  
Sihong Huang

Art Unit  
2632



– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on Jul 12, 2001

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) 27-68 is/are pending in the applica

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from considera

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 27-68 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirem

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_

20) ☐ Other: \_\_\_\_\_

Art Unit: 2632

## **DETAILED ACTION**

### ***Continued Prosecution Application***

1. The Request filed on 7/12/01 for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application having the same serial number is acceptable and a RCE has been established. An action on the RCE follows.

### ***Response to Amendment***

2. This Office Action is responsive to the amendment filed 7/12/01. As directed by the amendment, all previously pending claims 1, 3-22 and 24-26 have been canceled, new claims 27-68 have been added. Thus, claims 27-68 are presently pending in this RCE application with claims 27 and 28 being the independent claims.

### ***Claim Objections***

3. Claims 27 and 28 are objected to because of the following informalities:

In claim 27, line 5, "the integrated circuit" lacks antecedent basis.

In claim 28, line 8, after the phrase "a dipole antenna for receiving", --radio wave energy from a receiver-- should be added for clarity and providing antecedent basis for the phrase "the radio wave energy" in line 10; and in line 9, before the term "receiver", "a" should be changed to -the--after the change in line 8 is made.

Art Unit: 2632

Appropriate correction is required.

***Claim Rejections - 35 U.S.C. § 112***

4. Claims 34, 35, 54 and 55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 34 and 54, "the write control component" lacks antecedent basis.

***Claim Rejections - 35 U.S.C. § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 27-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murdoch (U.S. Pat. No. 5,153,583) in view of Goff et al. (U.S. Pat. No. 6,154,137).

Regarding claim 27, Murdoch discloses an ID tag (transponder, see Fig. 1) for application to objects (col. 1, lines 14-15 and col. 8, lines 58-65) comprising in combination: an application specific IC die (IC chip, see Figs. 17 and 18) having; a signal receiving system for receiving data containing information and programming into the IC (col. 7, lines 27-29 and col. 8, lines 26-31); a data processing system for reading out information from the IC (col. 7, lines 27-29 and col. 8,

Art Unit: 2632

lines 22-26); a first antenna for receiving radio wave energy (col. 13, lines 14-17); a power storage means (Cs) for storing the radio wave energy received by the first antenna and for supplying energy to the IC (col. 13, lines 64-66, col. 14, lines 44-49 and col. 18, lines 39-42); and a second antenna for transmitting information from the IC to a receiver (col. 13, lines 14-17). Murdoch differs from the claimed invention in that Murdoch does not disclose that the antennas are dipole antennas. However, as taught by Goff in col. 5, lines 11-45, the antenna geometry and properties depend on the desired operating frequency of the RFID portion of the tag, dipole antennas are typically selected for higher operating frequencies comparing to spiral or coil antennas. Goff in Fig. 7 shows a tag with dipole antenna (23b) and Fig. 8 shows a tag with spiral or coil antenna (23c). Although Murdoch discloses spiral or coil antennas, it would have been obvious to an ordinary person skilled in the art that the tag of Murdoch can be modified to use dipole antennas for receiving and transmitting purposes depending on the particular application of the tags (e.g., operating on a high frequency). In addition, although dipole antennas tend to be larger in size, integrating dipole antennas onto the same IC die is do-able except for maybe a larger size IC chip. Therefore, it would have been obvious to an ordinary person skilled in the art to utilize dipole antennas to the tags of Murdoch with the teaching of Goff for different applications of the tags (e.g., high operating frequencies).

Regarding claim 28, Murdoch discloses an ID tag (transponder, see Fig. 1) for application to objects (col. 1, lines 14-15 and col. 8, lines 58-65) comprising in combination: an application specific IC on a die (IC chip, see Figs. 17 and 18) having; a signal receiving system for receiving

Art Unit: 2632

data containing information and programming into the IC (col. 7, lines 27-29 and col. 8, lines 26-31); a data processing system for reading out information from the IC (col. 7, lines 27-29 and col. 8, lines 22-26); an antenna for receiving and transmitting information from the IC to a receiver (col. 8, lines 14-31); and a power storage means (Cs) for storing the radio wave energy received by the antenna and for supplying energy to the IC (col. 13, lines 64-66, col. 14, lines 44-49 and col. 18, lines 39-42), wherein all components are located on the die (col. 18, lines 29-32).

Murdoch differs from the claimed invention in that Murdoch does not disclose that the antenna is dipole antenna. However, as taught by Goff in col. 5, lines 11-45, the antenna geometry and properties depend on the desired operating frequency of the RFID portion of the tag, dipole antennas are typically selected for higher operating frequencies comparing to spiral or coil antennas. Goff in Fig. 7 shows a tag with dipole antenna (23b) and Fig. 8 shows a tag with spiral or coil antenna (23c). Although Murdoch discloses spiral or coil antennas, it would have been obvious to an ordinary person skilled in the art that the tag of Murdoch can be modified to use dipole antennas for receiving and transmitting purposes depending on the particular application of the tags (e.g., operating on a high frequency). In addition, although dipole antennas tend to be larger in size, integrating dipole antennas onto the same IC die is do-able except for maybe a larger size IC chip. Therefore, it would have been obvious to an ordinary person skilled in the art to utilize dipole antennas to the tags of Murdoch with the teaching of Goff for different applications of the tags (e.g., high operating frequencies).

Art Unit: 2632

Regarding claims 29-32 and 49-52, as addressed above, Goff discloses that utilizing dipole antenna for receiving RF energy and/or transmitting information in security tags are well known and well used in the art (col. 5, lines 11-45). In addition, Murdoch discloses a component (Cs.) that stores radio wave energy received by the antenna and powers the ID tag (col. 13, lines 64-66, col. 14, lines 44-49 and col. 18, lines 39-42).

Regarding claims 33 and 53, although Murdoch and Goff do not disclose that energy can be received from the claimed sources (i.e., microwaves, infrared, visible light and ultraviolet light), such particular energy source is well known in the art and therefore an obvious modification to the ID tag of Murdoch.

Regarding claims 34, 35, 54 and 55, Murdoch discloses a nonvolatile memory (col. 14, line 68; also see Figs. A, B and E).

Regarding claims 36 and 56, although Murdoch does not specifically disclose a multiplexer component, Murdoch in col. 8, lines 16-31 discloses multiple information or data can be extracted from the received carrier signal, a multiplexer component for controlling the flow of such information or data would have been obvious to include in the tag of Murdoch.

Regarding claims 37 and 57, although Murdoch does not specifically disclose a pulse generating circuit component, providing such well known and well used component in a transponder is extremely well known in the art and therefore an obvious modification to the tag of Murdoch.

Art Unit: 2632

Regarding claims 38-41 and 58-61, although Murdoch does not specifically disclose that the receiving and/or transmitting information is in the specific form (e.g., analog or digital), converting one to another by using an A/D or D/A converter is a well known technique in the art and therefore an obvious modification to the tag of Murdoch.

Regarding claims 42 and 62, Murdoch discloses a clock generating circuit component (col. 16, lines 6-7).

Regarding claims 43 and 63, Murdoch discloses a shift register circuit component (see Fig. 16B).

Regarding claims 44 and 64, although neither Murdoch nor Goff specifically discloses that the antenna component for transmitting information is a back scatter type antenna, providing a back scatter type antenna in a tag is extremely well known in the art and therefore an obvious modification to the modified tag of Murdoch and Goff.

Regarding claims 45 and 65, although Murdoch does not specifically disclose the claimed materials being used to build or mount the IC on, such materials used in making tags are well known in the art and therefore an obvious modification to the tag of Murdoch depending on the type of article the tag attached to.

Regarding claims 46-48 and 66-68, although Murdoch does not disclose that the IC contains test and monitoring control circuitry, incorporating additional functionality, capability, circuitry and/or device to the tag is well known in the art and therefore an obvious modification to the tag of Murdoch.



Art Unit: 2632

7. Claims 28 and 49-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carroll (U.S. Pat. No. 4,857,893) in view of Goff (U.S. Pat. No. 6,154,137).

Regarding claim 28, Carroll discloses an ID tag for application to objects (col. 3, lines 11-20) comprising in combination: an application specific IC on a die (98, see Fig. 9) having; a signal receiving system for receiving data containing information and programming into the IC, and a data processing system for reading out information from the IC (col. 3, lines 37-57, col. 9, lines 31-68, and col. 11, lines 17-27); an antenna (20) for receiving and transmitting information from the IC to a receiver (12); and a power storage means for storing the radio wave energy received by the antenna and for supplying energy to the IC (C1, col. 7, lines 58-66, col. 8, lines 3-7), wherein all components are located on the die (col. 11, line 11 to col. 12, line 51). Carroll differs from the claimed invention in that Carroll does not disclose that the antenna is dipole antenna. However, as taught by Goff in col. 5, lines 11-45, the antenna geometry and properties depend on the desired operating frequency of the RFID portion of the tag, dipole antennas are typically selected for higher operating frequencies comparing to spiral or coil antennas. Goff in Fig. 7 shows a tag with dipole antenna (23b) and Fig. 8 shows a tag with spiral or coil antenna (23c). Although Carroll discloses a spiral or coil antenna, it would have been obvious to an ordinary person skilled in the art that the tag of Carroll can be modified to use dipole antennas for receiving and transmitting purposes depending on the particular application of the tags (e.g., operating on a high frequency). In addition, although dipole antennas tend to be larger in size, integrating dipole antennas onto the same IC die is do-able except for maybe a larger size IC chip.

Art Unit: 2632

Therefore, it would have been obvious to an ordinary person skilled in the art to utilize dipole antennas to the tags of Carroll with the teaching of Goff for different applications of the tags (e.g., high operating frequencies).

Regarding claims 49-52, as addressed above, Goff discloses that utilizing dipole antenna for receiving RF energy and/or transmitting information in security tags are well known and well used in the art (col. 5, lines 11-45). In addition, Carroll discloses a component that stores radio wave energy received by the antenna and powers the ID tag (C1, col. 7, lines 58-66, col. 8, lines 3-7).

Regarding claim 53, although Carroll does not disclose that energy can be received from the claimed sources (i.e., microwaves, infrared, visible light and ultraviolet light), such particular energy source is well known in the art and therefore an obvious modification to the ID tag of Carroll.

Regarding claims 54 and 55, Carroll discloses a nonvolatile memory (PROM, EEPROM, see col. 9, lines 52-60).

Regarding claims 56 and 57, although Carroll doesn't specifically disclose a multiplexer component for controlling flow of information and data or a pulse generating circuit component, providing such well known and well used components in a transponder is extremely well known in the art and therefore an obvious modification to the tag of Carroll.

Regarding claims 58-61, although Carroll does not specifically disclose that the receiving and/or transmitting information is in the specific form (e.g., analog or digital), converting one to

Art Unit: 2632

another by using an A/D or D/A converter is a well known technique in the art and therefore an obvious modification to the tag of Carroll.

Regarding claim 62, Carroll discloses a clock generator circuit component (col. 4, lines 55-57).

Regarding claim 63, Carroll discloses a shift register circuit component (76).

Regarding claim 64, although neither Carroll nor Goff specifically disclose that the antenna component for transmitting information is a back scatter type antenna, Carroll in lines 1-15 of the abstract discloses a back scatter type signal transmission system and utilizing back scatter type of dipole antenna in tags is well known in the art and therefore an obvious modification to the modified tag of Carroll and Goff.

Regarding claim 65, although Carroll does not specifically disclose the claimed materials being used to build or mount the IC on, such materials used in making tags are well known in the art and therefore an obvious modification to the tag of Carroll depending on the type of article the tag attached to.

Regarding claims 66-68, although Carroll does not disclose that the IC contains test and monitoring control circuitry, incorporating additional functionality, capability, circuit, or device to the tag is well known in the art and therefore an obvious modification to the modified tag of Carroll and Goff.

Art Unit: 2632

8. Claims 27-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carroll (U.S. Pat. No. 4,857,893) in view of Goff (U.S. Pat. No. 6,154,137) as applied to claim 28 above, and further in view of Murdoch (U.S. Pat. No. 5,153,583).

Regarding claim 27, the modified tag of Carroll and Goff as addressed above in claim 28 further differs from claim 27 in that it doesn't specifically disclose two separate antennas for receiving and transmitting. However, as evidenced by Murdoch in col. 13, lines 14-17, providing two separate antennas in place of a single antenna for receiving and transmitting signals in tag device for better reception and simple circuit design is well known in the art and therefore an obvious modification to the modified tag of Carroll and Goff.

Regarding claims 29-32, as addressed above, Goff discloses that utilizing dipole antenna for receiving RF energy and/or transmitting information in security tags are well known and well used in the art (col. 5, lines 11-45). In addition, Carroll discloses a component that stores radio wave energy received by the antenna and powers the ID tag (C1, col. 7, lines 58-66, col. 8, lines 3-7).

Regarding claim 33, although Carroll does not disclose that energy can be received from the claimed sources (i.e., microwaves, infrared, visible light and ultraviolet light), such particular energy source is well known in the art and therefore an obvious modification to the ID tag of Carroll.

Regarding claims 34 and 35, Carroll discloses a nonvolatile memory (PROM, EEPROM, see col. 9, lines 52-60).

Art Unit: 2632

Regarding claims 36 and 37, although Carroll doesn't specifically disclose a multiplexer component for controlling flow of information and data or a pulse generating circuit component, providing such well known and well used components in a transponder is extremely well known in the art and therefore an obvious modification to the tag of Carroll.

Regarding claims 38-41, although Carroll does not specifically disclose that the receiving and/or transmitting information is in the specific form (e.g., analog or digital), converting one to another by using an A/D or D/A converter is a well known technique in the art and therefore an obvious modification to the tag of Carroll.

Regarding claim 42, Carroll discloses a clock generator circuit component (col. 4, lines 55-57).

Regarding claim 43, Carroll discloses a shift register circuit component (76).

Regarding claim 44, although neither Carroll nor Goff specifically disclose that the antenna component for transmitting information is a back scatter type antenna, Carroll in lines 1-15 of the abstract discloses a back scatter type signal transmission system and utilizing back scatter type of dipole antenna in tags is well known in the art and therefore an obvious modification to the modified tag of Carroll and Goff.

Regarding claim 45, although Carroll does not specifically disclose the claimed materials being used to build or mount the IC on, such materials used in making tags are well known in the art and therefore an obvious modification to the tag of Carroll depending on the type of article the tag attached to.

Art Unit: 2632

Regarding claims 46-48, although Carroll does not disclose that the IC contains test and monitoring control circuitry, incorporating additional functionality, capability, circuit, or device to the tag is well known in the art and therefore an obvious modification to the modified tag of Carroll and Goff.

***Response to Arguments***

9. Applicant's arguments with respect to claims 27-68 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872-9314, (for formal communications intended for entry)

**Or:**

(703) 872-9314, (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).

Art Unit: 2632


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sihong Huang whose telephone number is (703) 305-3966.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery Hofsass, can be reached on (703) 305-4717.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office whose telephone number is (703) 306-0377.

S. Huang

August 24, 2001

  
DANIEL J. WU  
Primary Examiner  
8/24/01